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Environment and sustainable development:
International Strategy for Disaster Reduction

International cooperation to reduce the impact of the El Niño phenomenon

Report of the Secretary-General**

Summary

The present report provides an overview of activities undertaken at the global, regional and national levels in support of the objectives set out by the General Assembly to reduce the social, economic and environmental impacts related to climate variabilities, such as El Niño (see General Assembly resolution 56/194).

The report argues in favour of strong support to ongoing activities to ensure synergy between science, technology and the United Nations system in order to further improve the understanding of the effects of El Niño, the prediction of potential impacts and the development of preventive measures. In the same vein, capacity-building programmes need to include the development of integrated disaster risk management plans, including such areas as risk assessment, early warning systems, training and public awareness programmes, and transfer of technical knowledge, as well as emergency response management with recovery resources, including the strengthening of community-based organizations to deal with climate variability.

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The report recommends the undertaking of reviews of ongoing programmes on both the El Niño phenomenon and the strengthening of early warning systems. Those reviews should be part of the planned 10-year review of the Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation and its Plan of Action, which was endorsed by the General Assembly to take place in 2004. The report also recommends that the international community continue to support the establishment of an international centre for the study of El Niño in Ecuador, as called for in General Assembly resolution 56/194. Finally, the report emphasizes the need to take full stock of the outcomes of the World Summit on Sustainable Development and to maintain coordination of the information flow concerning El Niño.

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I. Introduction

1. Of all abnormal weather and climatic events, the El Niño phenomenon is perhaps the most likely to lead to extensive natural hazards with the potential to seriously affect humankind. That assertion is well supported by the outcomes of the 1997-1998 El Niño, which is now generally recognized to have been one of the most intense and devastating in recorded history. Although the present report uses the term "El Niño", it should be noted that the specific changes in weather and climate patterns across the Pacific Ocean and the associated ocean-atmosphere processes are referred to as the El Niño Southern Oscillation (ENSO). The other extreme of the Southern Oscillation is associated with colder than normal waters over the eastern equatorial Pacific Ocean and a piling up of warm waters in the west, and is referred to as a La Niña event. The two extremes are often referred to as the warm and cold phases, respectively, of ENSO, indicating that they appear to be part of a single phenomenon.

2. Since the previous El Niño phenomenon occurred five years ago (1997-1998) and El Niño events, during the last 30 years, have reappeared at varying intensities about four to six years apart, there is an increased probability of an El Niño event developing in the near future. Throughout 2001 and 2002, the World Meteorological Organization (WMO) and the International Research Institute (IRI) of Columbia University produced *El Niño Outlooks*,[1] as a contribution to the Inter-Agency Task Force on Disaster Reduction. Although uncertainties remain, the earlier consolidated statements (August 2001 and March 2002) considered the large-scale situation to be favourable for El Niño development in 2002. The *El Niño Outlook* of June 2002 stated that developments in the equatorial Pacific represented a significant progression towards the formation of a basin-wide El Niño event. Those statements are an early warning for organization and public authorities at all levels to strengthen their preparedness capacities and contingency planning in the face of raised expectations of an increased range of variability in climate related phenomena, especially in tropical and subtropical regions of the world, which could result in the disruption of normal rainfall and temperature patterns, including increases in the frequency and intensity of extreme events, such as floods, droughts, tropical cyclones and ensuing landslides.

II. Institutional background

3. In its resolution 54/219, the General Assembly endorsed the International Strategy for Disaster Reduction as the international framework for addressing the challenge posed by the growing incidence and scale of disasters and their long-term social, economic and environmental consequences for vulnerable countries worldwide, in particular in developing countries. In particular, Member States took note that the considerable recent advances in seasonal weather and climate predictions, including such phenomena as El Niño, allow for improved preparedness of vulnerable communities. This highlighted the importance of a visible focal point within the United Nations system for scientific and technical aspects of natural disaster preparedness, prevention and mitigation.

4. In its resolution 56/194, the General Assembly also took note of the measures adopted in order to ensure the continuity of international cooperation to reduce the impact of the El Niño phenomenon within the framework of the Strategy. In that context, the General Assembly invited countries, intergovernmental organizations and all those participating in the Strategy to provide technical and financial assistance, including national capacity-building, to developing countries to support global and regional observation system and research, including the dissemination of data on El Niño, in order to prevent, mitigate and redress the negative effects of the phenomenon.

5. The Inter-Agency Task Force on Disaster Reduction was established in 2000 as the main forum within the United Nations system for devising strategies and policies for the reduction of natural hazards; to identify gaps in disaster reduction policies and programmes and recommend remedial action; to ensure complementarity of action by agencies involved in disaster reduction; to provide policy guidance to the Secretariat; and to convene meetings of experts on issues related to disaster reduction. In carrying out its activities, the Task Force established four working groups: Working Group I, led by WMO, deals with climate and disasters; Working Group II, led by the United Nations Environment Programme (UNEP), focuses on early warning; Working Group III, led by the United Nations Development Programme (UNDP), deals with risk vulnerability and impact assessment; and Working Group IV, which is led by the Global Fire

Monitoring Centre, deals with wildland fires. In its same resolution, the General Assembly welcomed the establishment of the working group on climate and disasters at its fifty-sixth session, which has continued the work initiated by the inter-agency task force on El Niño.

III. Related activities

6. The previous report of the Secretary-General on this subject matter (A/56/76), provided an overview of a number of activities carried out at the global, regional and national levels in pursuance of General Assembly resolution 52/200 and aimed at reducing the impact of future El Niño phenomena and similar climatic variables. The activities described relate to the study of lessons learned from the 1997-1998 El Niño event, both from a scientific and technical perspective and the application of seasonal to interannual forecasts and the related societal efforts to reduce vulnerability. The report described in particular:

- Working Group I on climate and disasters, led by WMO, set up to ensure that climate-time-scale factors are appropriately incorporated in the work carried out under the Strategy.
- The first Intergovernmental Meeting of Experts on El Niño, held in Guayaquil, Ecuador, from 9 to 13 November 1998.
- The scientific and technical analysis of the 1997-1998 El Niño event, prepared by WMO, with additional financial and technical support from UNEP, the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization and the International Council for Science.
- A project to assess the impact of the El Niño event on 16 developing countries around the world, carried out by UNEP, WMO, the National Centre for Atmospheric Research, the United Nations University and the Strategy secretariat.
- The World Climate Programme/Climate Information and Prediction Services project, which is developing a coherent, global framework for effective operational seasonal to interannual climate prediction and dissemination to serve national meteorological and hydrological services.
- The climate outlook forums and the findings of the global review of regional climate outlook forums.
- The extreme climate events programme run by the Asian Disaster Preparedness Centre, in collaboration with the United States National Oceanic and Atmospheric Administration (NOAA) and with the support of the United States Office of Foreign Disaster Assistance.
- An agreement for a study on the prediction and amelioration of economic impacts of El Niño southern oscillation in Latin America and the Caribbean countries, signed in September 1999 by the Inter-American Development Bank and WMO.
- A regional workshop to assess climate variability impacts on water resources, which was convened by the South Pacific Applied Geoscience Commission, and held in Nadi, Fiji, in October 1999, and supported by the British High Commission (Fiji), UNEP, NOAA, the South Pacific Regional Environment Programme and WMO.

7. Other activities mentioned in the previous report that bridge the gap between forecasts and end users included the International Geosphere-Biosphere Programme START Climatic Variability and Agriculture Protection project. A European project, Promoting the Information Society in Europe, has a major component on agricultural applications, and a number of pilot projects around the world have been arranged by NOAA and IRI, and a number of activities have been undertaken by the Pacific ENSO Application Centre in Hawaii, the Agricultural Production Systems Research Unit, in Queensland, Australia, and national meteorological services in a number of countries.

IV. Recent developments

8. A number of the activities described above have been further developed and new processes are being undertaken. A number of international, regional and national organizations and institutions have been strengthening their capacities and developing programmes in support of the goals and objectives established under the Strategy, to reduce the impact of the El Niño phenomenon.

9. Task Force Working Group I (climate and disasters) has taken on the responsibility for ensuring that accurate information on processes leading to El Niño and related events is provided to the members of the Task Force. That information, provided through consolidated *El Niño Outlooks*, is then available for wider distribution through the institutional networks of the Task Force members and the Strategy secretariat.

10. In late 2001, data relating to the equatorial Pacific region showed a number of precursors of conditions that might lead to the development of an El Niño event during the following months. In January 2002, consultations were initiated by the Working Group among major operational meteorological centres and research institutions around the world that were monitoring and generating predictions on those developments. In early February 2002, the first of a series of *El Niño Outlooks* was prepared by WMO, in collaboration with IRI. That *Outlook* and subsequent bulletins were distributed to national meteorological and hydrological services and members of the Task Force. Early signals did not point to an event of the severity of the El Niño of 1997-1998. Nonetheless, weather conditions characteristic of El Niño events were subsequently observed along the equatorial coastal regions of South America, including a number of heavy rainfall and flooding episodes, with consequential loss of life, in Ecuador, Peru and Chile. Drier conditions were also observed to be developing in some areas further westward in the Pacific, such as across the Philippines and parts of eastern Australia, which is another distinguishing feature of an El Niño event.

11. In addition to preparing the *El Niño Outlook* bulletins, the Working Group provided briefing sessions for agencies and organizations of the Strategy network to apprise them of recent developments with regard to possible future emergency response and relief.

12. Task Force Working Groups I (climate and disasters) and III (risk, vulnerability and impact assessment) are developing stronger inter-agency cooperation in this area. One proposal relates to the correlation of climate and disaster databases for four to six countries which are exposed to El Niño-related events. The objective is to identify a pattern of relationship between climate impact and disaster databases, which will help to generate more reliable forecasts and credible information on risks at the national and local levels. The programme will network with the institutions which have established research programmes for studying El Niño, and will build upon their investigations and databases of climate risks.

13. Working Group IV (wildland fire) has produced a report on wildland fires and international cooperation to reduce the impacts of the El Niño phenomenon. The report recognizes that in some regions of the tropics and subtropics, ENSO phenomenon leads to an increase of the duration and intensity of fire seasons. Possible consequences are:

(a) An increase in number of fire occurrences and change of fire behaviour due to decreasing moisture content of vegetation and an increase of fuel consumption and fire intensity;

(b) More fires of extreme intensity and impacts (fire severity);

(c) The effects of ecosystem changes due to climate change, coupled with changing fire regimes, will lead to an overall change of vegetation cover, possibly resulting in a loss of forest cover;

(d) Peat and swamp biomes will become increasingly vulnerable to fire. Wildfires penetrating into organic layers will result in destruction of ecosystems and biodiversity and lead to the release of radioactive carbon to the atmosphere.

14. The report calls for measures to cope with drought and fire on different time scales, and includes examples of successful local-to-global early warning and monitoring systems of fire that assist in improving preventive and preparedness measures.

15. The World Health Organization (WHO), in collaboration with UNEP and WMO and supported by the Global Fire Monitoring Centre (GFMC), has issued comprehensive guidelines for Governments and responsible authorities on actions to be taken when their population is exposed to smoke from fires. The WHO-UNEP-WMO *Health Guidelines for Vegetation Fire Events: Guideline Document* gives information on vegetation fires at the global, regional and national levels. The *Guidelines* give insights into acute and chronic health effects of air pollution due to biomass burning, advice on effective public communications and mitigation measures, and guidance for assessing the health impacts of vegetation fires. They also provide measures on how to reduce the burden of mortality and preventable disability suffered,

particularly by the poor, and on the development and implementation of an early air pollution warning system.

16. GFMC was established in Freiburg, Germany, in response to the fire and smoke episode during the El Niño of 1997-1998. GFMC started its operations as a contribution of Germany to the International Decade of Natural Disaster Reduction. As its Convener, GFMC supports the efforts of the Task Force Working Group IV (wildland fires) to facilitate knowledge and technology transfer and capacity-building in the area of fire management to regions with high risk of drought during an El Niño event. The working group cooperates closely with Working Group II (early warning), led by UNEP.

17. The Guayaquil declaration proposed immediate actions to evaluate the feasibility to establish an international research centre for the El Niño/Southern Oscillation. In February 1999, WMO organized a mission to Ecuador to conduct a feasibility study on the establishment of such a centre. In its resolution 54/220 on international cooperation to reduce the negative impacts of the El Niño phenomenon, the General Assembly called upon the relevant United Nations organizations and the international community to take the necessary measures, as appropriate, to establish such a centre. In September 2001, a memorandum of cooperation was signed between WMO and the Government of Ecuador. It establishes a trust fund, of which WMO is the trustee, to begin the necessary actions for the creation of the centre. In April 2002, another mission was conducted in order to advance the establishment of an international research centre for El Niño in Guayaquil. That mission was organized by WMO and supported by the Strategy secretariat, in response to General Assembly resolution 56/194. The mission met with representatives of key international, regional and national institutions based in Quito and Guayaquil. The results indicated that there was sufficient support to proceed as soon as possible with the establishment of the centre in Guayaquil in 2002 (see annex).

18. UNDP has provided emergency assistance in the wake of El Niño-related disasters to such countries as Peru, Ecuador, Cost Rica, Somalia, Indonesia and Papua New Guinea. Many of those emergency programmes have evolved to address the secondary and indirect effects of El Niño. In addition, those operations have provided opportunities to develop a capacity for prevention, preparedness and mitigation at the national and community levels. UNDP developed a joint project through which Peru and Ecuador together obtained updated maps of high-risk areas from satellite imagery, and supplemented that with database information to show the degree of vulnerability in terms of, inter alia, population, major infrastructure, housing, schools and health centres. UNDP is supporting two regional projects in the Caribbean and Central America for capacity-building in the area of disaster risk reduction. In both the programmes, UNDP has emphasized the component of monitoring and reducing climate risks related to El Niño.

19. In the context of the regular convening of tripartite meetings between the UNDP Bureau for Crisis Prevention and Recovery, the Office for the Coordination of Humanitarian Affairs and the Strategy secretariat, a proposal related to increasing cooperation for specific steps to reduce and mitigate the impact of El Niño events is being developed. It envisages multi-year country programmes, under which a number of interventions aimed at improving national capacities, databases, risk information, contingency planning and public awareness will be promoted.

20. Finally, the draft plan of implementation of the World Summit on Sustainable Development notes that an integrated, multi-hazard, inclusive approach to address vulnerability, risk assessment and disaster management, including prevention, mitigation, preparedness, response and recovery, is an essential element of a safer world in the twenty-first century. In particular, it calls for action at all levels to develop and strengthen capacity to collect and disseminate scientific and technical information, including the improvement of early warning systems for predicting extreme weather events, especially El Niño/La Niña, through the provision of assistance to institutions devoted to addressing such events, including the International Centre for the Study of the El Niño Phenomenon.

V. Other ongoing activities

21. Starting in November 2000, based on a joint decision by their Presidents, Bolivia, Colombia, Ecuador, Peru and Venezuela launched the Regional Andean Programme for Risk Reduction and Disaster Prevention (PREANDINO). The 1997-1998 El Niño affected significantly the welfare and economic development of those countries. The Andean

Development Community (CAF) received a first mandate from the Presidents of member countries, who met in Guayaquil in 1998, to carry out an assessment of the socio-economic impact of the disasters that resulted from El Niño with a view to strengthening prevention. Many institutions from each country participated in the effort, producing a set of policy recommendations and suggestions for projects to respond to future events. Based on the results of the assessment and the lack of disaster reduction components in the Andean nations' sustainable development policies, in 1999 CAF was again entrusted by the Presidents with the task of supporting the institutional strengthening required at the regional level to achieve that objective and build capacity in risk management by promoting collaboration across national borders.

22. The general objective of the programme is to promote and support the design of national and sectoral risk mitigation policies and of institutional arrangements aimed at incorporating prevention into development planning. The ministries of planning or their equivalent are spearheading the programme at the national level in consideration of the fact that prevention plans and programmes should fall within development planning and policy-making. In July 2001, it was agreed that the national platforms for risk reduction and disaster prevention that have been set up or strengthened within the PREANDINO framework would become the Strategy focal points for cooperation and integration in that subregion.

23. Since its establishment in 1989, the Drought Monitoring Centre in Nairobi has played an important and useful role in providing the subregion with weather and climate advisories, including prediction and early warnings on severe climate events, such as floods and droughts. The Centre is also working with other partners to address how to optimize the use of climate information and prediction products through day-to-day operations, user-specific workshops and pilot application projects. The Centre and the Great Horn of Africa National Meteorological and Hydrological Services provide 10-day, monthly and seasonal climate monitoring, prediction and early warning products. They also provide updates on any major past, current and anticipated extreme regional climate events. For example, due to the potential of El Niño development later in 2002, the Centre, WMO and the Great Horn of Africa Services started, in April 2002, to issue a regional climate watch to disseminate updated climate information to partners, collaborators and users.

24. The Asia-Pacific Network for Global Change Research is supporting a number of projects related to climate change and variability in the Asia and Pacific region. Those projects aim to integrate scientific findings with social and economic factors, and to provide inputs for policy-making and implementation.

VI. Conclusions

25. **The impacts related to climate variability, such as the El Niño phenomenon, are hindering efforts undertaken at all levels towards sustainable development. It is therefore imperative to strengthen active collaboration and generate synergy between science, technology and operational entities within the United Nations system to improve the understanding of the effects of El Niño, the prediction of potential impacts and the development of preventive actions. In addition, national capacity-building needs to include development-integrated disaster risk management plans, including risk assessment, early warning systems, training and public awareness programmes and transfer of technical knowledge, as well as emergency response management and recovery resources. Community-based organizations should be strengthened to deal with climate variability and its impacts.**

26. **The activities and initiatives described in the present report build on the increasing capacity to predict global climate patterns, improvements in weather forecasting and the availability of other climate information. It is an ongoing requirement for organizations and bodies of the United Nations system and other intergovernmental organizations to adopt a comprehensive approach to reducing the impact of El Niño and related phenomena, and to intensify their cooperation with the affected regions with special reference to small island developing States and landlocked countries, in consonance with the spirit of the International Strategy for Disaster Reduction.**

27. **The increase in the scientific understanding of the cause of seasonal to interannual climate variability is due in large part to the sustained availability of real-time "in situ" and remotely**

sensed data from the current ENSO observing system in the Pacific region. Those data are essential for further model development. However, continued progress in filling the existing gaps in our knowledge depends on maintaining and improving observing systems globally, especially the enhancement of "in situ" observing systems in the tropical regions of the Atlantic and Indian Ocean basins.

28. A timely opportunity is provided by the fact that in 2002, the Strategy secretariat has started preparations for the 10-year review of the Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation, and its Plan of Action, which were adopted by the World Conference on Natural Disaster Reduction in Yokohama in 1994. The review, which was endorsed by the General Assembly (see A/56/76), is expected to provide an opportunity to assess the state of disaster reduction worldwide, help to identify gaps and means of implementation, and chart the course of action for the decade to come, taking account of the outcome of the World Summit on Sustainable Development.

VII. Recommendations

Recommendation 1

29. The Strategy secretariat, supported by the members of the Inter-Agency Task Force on Disaster Reduction, should continue ensuring that policies adopted under the Strategy to reduce the negative impacts caused by climate anomalies, such as El Niño, are recognized as an integral part of sustainable development plans of action and policies at all levels, in particular concerning the outcomes of the World Summit on Sustainable Development. Activities launched under the Strategy to reduce the impact of the El Niño phenomenon and other climate variabilities should take account of relevant Summit outcomes, as well as relevant sustainable development conventions, such as the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa.

Recommendation 2

30. The forthcoming 10-year review of the Yokohama Strategy and Plan of Action should include a full thematic review on the status of progress achieved in meeting the targets set out in the Guayaquil declaration (1998). In particular, the thematic review should assess efforts undertaken by the international community to enhance its capacity to use climate-related data and information to increase resilience to related extreme events.

Recommendation 3

31. In the same spirit, the 10-year review of the Yokohama Strategy and Plan of Action should include thematic reviews of the work accomplished five years after the Potsdam Conference on Early Warning (1998). The Inter-Agency Task Force on Disaster Reduction and its working groups should support that process, in particular through collaborative efforts, which should also involve collaboration with Governments, agencies and other entities concerned.

Recommendation 4

32. In keeping with the findings of the mission led by WMO with the support of the Strategy secretariat and the memorandum of cooperation between WMO and the Government of Ecuador of September 2001, the relevant United Nations organizations and the international community should, as appropriate, provide scientific, technical and financial assistance to support the establishment of an international centre for the study of the El Niño phenomenon and other regional and subregional institutions and networks devoted to addressing the problems caused by natural disasters, mainly those associated with extreme weather events linked to climate change, as recommended in General Assembly resolution 56/194.

Recommendation 5

33. United Nations agencies and organizations, supported by the Inter-Agency Task Force on Disaster Reduction, in particular through its working groups, should strengthen the coordination of the information flow on the development of the El Niño event, which has proved valuable for a

wider audience seeking an authoritative voice on the event, including predictions of its likely course over time.

Recommendation 6

34. **The General Assembly should be apprised at its fifty-ninth session, in 2004, of ongoing efforts to increase international cooperation to reduce the impact of El Niño.**

Notes

[1] *El Niño Outlooks* are a collaborative effort between WMO and IRI; they draw on contributions from the Australian Bureau of Meteorology, the China Meteorological Administration, the European Centre for Medium Range Weather Forecasts, IRI, the Japan Meteorological Agency, the Korea Meteorological Administration, the National Institute of Water and Atmospheric Research of New Zealand, the Met Office of the United Kingdom, the United States Climate Prediction Center, the Centre for Ocean-Land-Atmosphere Studies, and the Climate Variability and Predictability (CLIVAR) Project of the World Climate Research Programme.

Annex

Summary of a report entitled "Towards the International Research Center for El Niño in Guayaquil, Ecuador"

1. General Assembly resolution 52/200 on the international cooperation to reduce the negative impacts of El Niño phenomenon, the Guayaquil Declaration proposed immediate actions to evaluate the feasibility to establish an International Research Centre for the El Niño/Southern Oscillation (ENSO). In February 1999, WMO organized a mission to Ecuador to conduct a feasibility study on the establishment of such a centre. In September 2001, a memorandum of cooperation was signed between WMO and the Government of Ecuador, establishing a trust fund, of which WMO is the trustee, to begin the necessary actions for the creation of the centre. In April 2002, another mission was conducted in order to advance the establishment of a centre in Guayaquil. That mission was organized by WMO and supported by the secretariat of the Inter-Agency Task Force on Disaster Reduction in response to General Assembly resolution 56/194. The mission met with representatives of key international, regional and national institutions based in Quito and Guayaquil. The results indicated that there was sufficient support to proceed as soon as possible with the establishment of the centre in Guayaquil in 2002.

2. The functions identified by the joint mission for the centre are the following:

- The centre is to be an international research centre, using the increased scientific capabilities of producing useful forecasts up to a season or more in advance in areas affected by the ENSO phenomenon, with a special focus on the eastern equatorial Pacific and the western countries of South America.
- The centre should also be designed to have direct benefits in the region, deriving from the development of regional databases for applications that would benefit many social and economic sectors, including agriculture, health and water resources. Through the provision of seasonal forecasts and El Niño-La Niña warnings and advisories, the centre would also promote actions for disaster risk reduction.
- For the best utilization of the warnings and advisories, scientific data must be converted into information products that are relevant to particular sectors. A core unit in the centre should be responsible for carrying out that work, in collaboration with other national, regional and international institutions. The International Strategy for Disaster Reduction and its regional office could contribute to such activity.

3. The centre should be thought of as a means to conduct a regional project that addresses four major needs:

(a) Early warning systems for disaster loss reduction;

(b) Adaptation to climate change and variability;

(c) Transboundary water issues (coastal and shared waterbeds);

(d) Sustainable development and institutional capacity-building.

4. Activities that could be undertaken by the centre include the down-scaling of global-scale climate modelling experiments from around the world and interpreting the results for the region, and generating and facilitating access to regional and global databases on meteorological, oceanographic, chemical and biological parameters. Collaboration among official (government) agencies and academic institutions through the centre would demonstrate the value of better information products through the application of sound scientific principles. The centre could also support educational and training activities in the region based on the experience of scientists from Latin America and the rest of the world.

5. Activities in the Andean region imply a growing capability and sense of cooperation between institutions, suggesting that the time is right to establish an institution in Guayaquil that will bring those various activities together in a more formal way. The capability to make productive use of ENSO predications is growing. The centre and its outreach activities promise to yield synergies and many benefits

for the region. On the national level, the above-mentioned memorandum of cooperation between Ecuador and WMO established a technical committee which will provide relevant advice on operational activities. Scientific developments indicate that enough is already known to provide useful advisory services, but that further research conducted by the centre, both locally and globally, would be valuable, in order to promote concrete actions for the reduction of El Niño phenomenon impacts.

6. It has been proposed that the centre be implemented in a phased approach, the first phase of which would cover the period 2002 to mid-2003. Specific activities during that phase would include a decision and work on securing satisfactory accommodation facilities; the selection of initial core staff; formation of an International Advisory Board to facilitate, inter alia, the selection of a director for the centre; the installation of effective data-communication systems; the negotiation of cooperative arrangements with other centres; the initiation of an operational seasonal forecasting system and continuation of research on seasonal forecasts to underpin advisory services for various economic sectors by national and academic institutions; and the establishment of an information and communication function.

7. A number of relevant activities are already well under way, and it is recommended that emphasis be placed on the formation of an international board in time for a centre stakeholder workshop to be held towards the end of 2002. It is further recommended that the Member States of the United Nations consider the possibility of financially supporting activities to be carried out by the centre.